

REMARKS

Claims 1-20 are pending in this application, all of which have been amended. No new claims have been added.

As a preliminary matter, the specification refers to Japanese Patent Application Laid-open No. 2001-116371 as admitted prior art.

Accordingly, a copy of this reference, along with a concise English explanation of the relevant portions, is being filed concurrently with this response in an IDS.

Claim 1 stands rejected under 35 USC §103(a) as unpatentable over “Transcritical CO₂ Cycle Technology” 2002 SAE Automotive Alternate Refrigerant Systems Symposium, July 2002, pages 1-17 by Joo Seok Baek, et al. (hereinafter “**Baek et al.**”) in view of U.S. Patent 4,739,628 to Shoemaker (hereinafter “**Shoemaker et al.**”).

Applicants respectfully traverse this rejection.

The Figure on page 12 of **Baek et al.** discloses a CO₂ cycle “expansion device with output work” (“ED-WOW”) including a gas cooler, a compressor, a regenerator, an evaporator and an accumulator. An auxiliary compressor, as recited in claim 1 of the instant application, is not shown.

Shoemaker et al. discloses a non-CO₂ heat pump having a single four-way valve.

Neither **Baek et al.** nor **Shoemaker et al.** discloses a plurality of four-way valves connecting

a compressor, outdoor heat exchanger, expander, indoor heat exchanger and auxiliary compressor such that when the plurality of four-way valves are switched over the refrigerant reverses flow direction between the compressor and the auxiliary compressor, as in the present invention.

Accordingly, claim 1 has been amended to clarify this distinction, and the 35 USC §103(a) rejection should be withdrawn.

The Examiner has allowed claims 10-20 and has indicated that claims 2-9 would be allowable if rewritten in independent form. Applicants respectfully defer this action until a FINAL Office Action, if any, is received.

In view of the aforementioned amendments and accompanying remarks, claims 1-20, as amended, are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Enclosures: Substitute Abstract of the Disclosure

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